

WHAT IS CLAIMED IS:

1. An ink jet recording apparatus comprising:  
a carriage for mounting a recording head for  
effecting recording by discharging recording ink and  
5 for moving said recording head; and  
recovery means for effecting a recovery  
operation with respect to said recording head,  
wherein said recording apparatus is forwarded  
from a manufacturing factory in a condition that said  
10 recording head filled with transporting ink different  
from the recording ink is mounted on said carriage,  
and wherein an on-arrival recovery mode executed by  
said recovery means upon first usage of said  
recording apparatus by the user differs from a normal  
15 recovery mode executed by said recovery means after  
the first usage.

2. An ink jet recording apparatus according to  
claim 1, wherein said apparatus includes suction  
20 means for effecting suction from said recording head  
as recovery means, and suction pressure in ink  
suction from said recording head by means of said  
suction means in said on-arrival recovery mode is set  
to be greater than suction pressure in ink suction in  
25 said normal recovery mode.

3. An ink jet recording apparatus according to

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claim 1, wherein said apparatus includes suction means for effecting suction from said recording head as recovery means, and a suction amount in ink suction from said recording head by means of said suction means in said on-arrival recovery mode is set to be greater than a suction amount in ink suction in said normal recovery mode.

4. An ink jet recording apparatus according to claim 1, wherein said apparatus includes suction means for effecting suction from said recording head as recovery means, and the number of suction operations in ink suction from said recording head by means of said suction means in said on-arrival recovery mode is set to be greater than the number of suction operations in ink suction in said normal recovery mode.

5. An ink jet recording apparatus according to claim 1, wherein said on-arrival recovery mode is a mode in which one kind of recovery operations in said normal recovery mode are executed continuously by plural times.

6. An ink jet recording apparatus according to claim 1, wherein said recovery means includes suction means for effecting suction from said recording head,

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and the number of idle suction operations for  
discharging the ink from a cap by driving said  
suction means in a communication condition between  
the interior of said cap and the atmosphere upon ink  
5 suction from said recording head by said suction  
means in said on-arrival recovery mode is set to be  
greater than the number of idle suction operations in  
said normal recovery mode.

10 7. An ink jet recording apparatus according to  
claim 1, wherein said recovery means includes suction  
means for effecting suction from said recording head  
and a wiper for wiping said recording head, and the  
number of wiping operations of said wiper after ink  
15 suction from said recording head by said suction  
means in said on-arrival recovery mode is set to be  
greater than the number of wiping operations after  
ink suction in said normal recovery mode.

20 8. An ink jet recording apparatus according to  
claim 1, wherein said recovery means includes a wiper  
for wiping said recording head and a cleaner for  
cleaning said wiper, and the number of cleaning  
operations of said cleaner after the wiping of said  
25 wiper in said on-arrival recovery mode is set to be  
greater than the number of cleaning operations after  
the wiping in said normal recovery mode.

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9. An ink jet recording apparatus according to claim 1, wherein said recovery means includes suction means for effecting suction from said recording head and a wiper for wiping said recording head, and, in  
5 said on-arrival recovery mode, after ink suction from said recording head is firstly effected by said suction means, wiping of said wiper is effected.

10. An ink jet recording apparatus according to  
10 claim 1, wherein viscosity of the transporting ink is greater than that of the recording ink.

11. An ink jet recording apparatus according to  
15 claim 1, wherein the recording ink includes color material and the transporting ink does not include color material or has color component fewer than that of the recording ink.

12. An ink jet recording apparatus comprising:  
20 a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving said recording head; and  
recovery means for effecting a recovery operation with respect to said recording head,  
25 wherein said recording apparatus is forwarded from a manufacturing factory in a condition that said recording head filled with transporting ink different

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from the recording ink is mounted on said carriage,  
and wherein an on-arrival recovery mode executed by  
said recovery means upon first usage of said  
recording apparatus by the user is the same as a  
5 recovery mode executed upon exchange of said  
recording head among a plurality of recovery modes  
executed by said recovery means after the first usage.

13. An ink jet recording apparatus comprising:  
10 a carriage for mounting a recording head for  
effecting recording by discharging recording ink and  
for moving said recording head; and

a mounting section for mounting an ink tank for  
storing the recording ink to be supplied to said  
15 recording head,

wherein said recording apparatus is forwarded  
from a manufacturing factory in a condition that said  
recording head filled with transporting ink different  
from the recording ink is mounted on said carriage,  
20 and further comprising:

detection means for detecting whether said ink  
tank is mounted on said mounting section; and

alarm means for emitting alarm to the user of  
said recording apparatus if the fact that said ink  
25 tank is not mounted on said mounting section upon  
first usage of said recording apparatus by the user  
is detected by means of said detection means.

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14. An ink jet recording apparatus according to  
claim 1, 12 or 13, wherein said recording head  
includes an ink discharging electrothermal converter  
for generating thermal energy utilized for  
5 discharging the ink.

15. An ink jet recording apparatus according to  
claim 14, wherein the ink is discharged by utilizing  
pressure change based on growth of a bubble created  
10 by film boiling caused by the thermal energy  
generated by said electrothermal converter.

16. An ink jet recording apparatus according to  
claim 1, 12 or 13, wherein the transporting ink is  
15 heated by an ink temperature maintaining  
electrothermal converter within said recording head  
before or during the ink suction by said suction  
means in said on-arrival recovery mode.

20 17. An ink jet recording apparatus according to  
claim 1, 12 or 13, wherein the transporting ink is  
heated by an ink discharging electrothermal converter  
within said recording head before or during the ink  
suction by said suction means in said on-arrival  
25 recovery mode.

18. An ink jet recording apparatus according to

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claim 1, 12 or 13, wherein the transporting ink is  
heated by an ink temperature maintaining  
electrothermal converter and an ink discharging  
electrothermal converter within said recording head  
5 before or during the ink suction by said suction  
means in said on-arrival recovery mode.

19. An ink jet recording apparatus according to  
claim 1, 12 or 13, wherein the transporting ink is  
10 discharged by an ink discharging electrothermal  
converter within said recording head before or during  
the ink suction by said suction means in said on-  
arrival recovery mode.

20. An ink jet recording apparatus according to  
claim 1, 12 or 13, wherein the transporting ink is  
heated by an ink temperature maintaining  
electrothermal converter within said recording head  
and the transporting ink is discharged by an ink  
20 discharging electrothermal converter during the ink  
suction by said suction means in said on-arrival  
recovery mode.

21. An ink jet recording apparatus according to  
25 claim 1, 12 or 13, wherein the transporting ink is  
heated by an ink temperature maintaining  
electrothermal converter within said recording head

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from before the ink suction to the end of the ink suction by said suction means in said on-arrival recovery mode.

5           22. An ink jet recording apparatus according to claim 1, 12 or 13, wherein the transporting ink is heated by an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction  
10 means in said on-arrival recovery mode.

23. An ink jet recording apparatus according to claim 1, 12 or 13, wherein the transporting ink is heated by an ink temperature maintaining  
15 electrothermal converter and an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in said on-arrival recovery mode.  
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24. An ink jet recording apparatus according to claim 1, 12 or 13, wherein the transporting ink is discharged by an ink discharging electrothermal converter within said recording head from before the  
25 ink suction to the end of the ink suction by said suction means in said on-arrival recovery mode.

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25. An ink jet recording apparatus according to claim 1, 12 or 13, wherein the transporting ink is heated by an ink temperature maintaining electrothermal converter and the transporting ink is discharged by an ink discharging electrothermal converter within said recording head form before the ink suction to the end of the ink suction by said suction means in said on-arrival recovery mode.

26. An ink jet recording apparatus according to claim 1, 12 or 13, wherein, when the transporting ink is heated and discharged by an ink discharging electrothermal converter within said recording head from before the ink suction to the end of the ink suction by said suction means in said on-arrival recovery mode, an input signal value, frequency, ink color to be inputted and a discharge port can be selected appropriately, and any input signal value, frequency and ink color can be inputted to said ink temperature holding electrothermal converter of said recording head.

27. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising time counting means for counting an elapsed time from the forwarding.

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28. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising time reading means for reading the elapsed time from the forwarding.

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29. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising control means for judging and determining a heating amount of said recording head on the basis of the elapsed time from the forwarding.

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30. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising temperature history storing means for storing temperature history from the forwarding.

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31. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising temperature history reading means for reading temperature history from the forwarding.

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32. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising heating control means for judging and determining a heating amount of said recording head on the basis of temperature history from the forwarding.

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33. An ink jet recording apparatus according to claim 32, wherein a heating temperature for each color can be set by said heating control means.

5 34. An ink jet recording apparatus according to claim 1, 12 or 13, further comprising storing means capable of re-writing and calling an elapsed time and temperature history from the forwarding.

10 35. An ink jet recording apparatus according to claim 12 or 13, wherein viscosity of the transporting ink is greater than that of the recording ink.

15 36. A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving said recording head, and recovery means for effecting a recovery operation with respect to said recording head, the method  
20 comprising the steps of:

forwarding said ink jet recording apparatus from a manufacturing factory in a condition that said recording head filled with transporting ink different from the recording ink is mounted on said carriage;

25 and

executing an on-arrival recovery mode different from a normal recovery mode executed by said recovery

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means after first usage of said recording apparatus by the user by means of said recovery means upon the first usage, with respect to said recording head.

5           37. A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging recording ink and for moving said recording head, and recovery means for effecting a recovery operation  
10 with respect to said recording head, the method comprising the steps of:

            forwarding said ink jet recording apparatus from a manufacturing factory in a condition that said recording head filled with transporting ink different  
15 from the recording ink is mounted on said carriage; and

            executing an on-arrival recovery mode same as a recovery mode executed upon exchange of said recording head among a plurality of recovery modes  
20 executed by said recovery means after first usage of said recording apparatus by the user by means of said recovery means upon the first usage, with respect to said recording head.

25           38. A method for handling an ink jet recording apparatus comprising a carriage for mounting a recording head for effecting recording by discharging

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recording ink and for moving said recording head, and  
a mounting section for mounting an ink tank for  
storing the recording ink to be supplied to said  
recording head, the method comprising the steps of:

5 forwarding said ink jet recording apparatus from  
a manufacturing factory in a condition that said  
recording head filled with transporting ink different  
from the recording ink is mounted on said carriage;  
and

10 emitting alarm to the user of said recording  
apparatus if the fact that the said tank is not  
mounted on said mounting section upon first usage of  
said recording apparatus by the user is detected.

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